maintaining an instantaneous house advantage for the casino game, the instantaneous house advantage based on the wager, expected return for the game of chance, chosen frequency of the knowledge-based bonus game, and correctness of the answers, the instantaneous house advantage is always greater than or equal to zero and is variable within a set range of approximately 10% regardless of the correctness of the answers.

129. (new) The method of claim 128 wherein the limits of said set range are approximately 5% to 15%.

REMARKS

In the Made Final Rejection, all of the original 87 claims were rejected variously under 35 U.S.C. § 102, 103, and 112. Claims 31-41 and 59-87 are cancelled without waiver or prejudice to the Applicant's position and further arguments that these claims are patentably distinct. New claims 88-129 are added. It is respectfully requested that reconsideration of the remaining claims be made based upon the following arguments, declarations, evidence and amendments. The amendments to the claims 1-30 and 42-58 are attached as Exhibit A. The legal arguments and evidence set forth in the prior response are fully incorporated herein without waiver.

Objection to Drawings

In paragraph 1 of the Office Action, the drawings were objected to as not showing every feature of the invention specified in the claims. Specifically, claims 5-11, 14-18, 48, 49, 55 and 56 were stated. The Applicant was asked to review each claim. The Final Rejection states that "35 U.S.C. §133 . . . has nothing to do with the drawing requirement." The Applicant did not rely on § 133, but § 113. It also is respectfully maintained the drawings as originally submitted complied with §113. However, the Applicant herein submits, as Exhibit B, the following new informal drawings: Figures 5 and 6. No new matter is submitted. It is respectfully requested that this objection be removed.

New Figure 5 is submitted which repeats Figure 2 but adds further detail to steps

212, 214, 216, 218, 220, 222, 224 and 226. Step 212 sets forth that the underlying casino game is, in one embodiment, a slot game. A "slot game" is recited in claims 2, 26 and 44. New matter is not added since the use of a slot game is fully disclosed in the Specification, for example, at page 8, line 20 and Figure 1. The stop play step 218 has been amended to show the alternatives for stopping to occur at a known frequency or randomly chosen at a known statistical frequency. This corresponds to claims 7, 8, 29, 30 and 47. New matter is not added since these two alternate approaches are fully disclosed in the Specification, for example, at page 16, lines 29-30 and page 38, line 11. In step 220, embodiments in Figure 5 showing that the condition occurs during play in the underlying casino game 212 or is unrelated to play of the underlying casino game 212 is made and corresponds to claims 5, 6, 27, 28, 45, and 46. This does not result in new matter since full support for these two alternative features are found in the Specification, for example, page 9, lines 11-22 and page 38, lines 11-24. The alternate embodiments of bonus symbols, random number of wagers, timers, and dice roll are found at pages 8 and 38. In step 222, the following variations on the knowledge-based bonus game are shown in Figure 5 to include multiple choice (with only one correct or with at least one correct), requiring a proximate answer, providing a forced outcome puzzle, based on true/false answers, or at least one query. This supports the following claims: 12-25, 50-54, 57, and 58. This does not add new matter as full support for these knowledge-based game variations to the step 222 is disclosed in the Specification, for example, at page 6, line 25 to page 7, line 7 (multiple-choice), page 28, line 20 to page 29, line 4 (proximate answer), page 31, line 4 to page 32, line 21 (puzzle), page 28, lines 8-18 (true/false), page 39, lines 9-25 (at least one query). Step 226 has been amended in Figure 5 to show the alternatives of paying a higher amount when correct and paying a lower amount when incorrect. This is found in claims 18, 24, and 55. This does not add new matter as these variations are fully disclosed in the Specification, for example, at page 13, lines 4-11. The dotted lines show the claimed casino game 200 as supported in the Specification at page 37, lines 23 et seq.

New Figure 6 repeats originally provided Figure 2 except that Figure 6 shows the house advantage for the play of the casino game 200 having play of the underlying casino game 212 and play of the knowledge-based bonus game 222 which shows the

formula, the MAX limit (upper limit) for the house advantage, the MIN limit (lower limit) for the house advantage, and the preferred range for the house advantage for combined play. This supports claims 1, 9-11, 19, 25, 42, 48, 49 and 56. This does not add new matter since these claim features were fully disclosed in the Specification, for example, at page 8, line 16 to page 18, line 22.

It is requested that the objection be removed based on the above amendments to the drawings. These amended drawings also support new claims 88-129.

35 U.S.C. §112 (First Paragraph) Rejection

Claims 1-58 were rejected under 35 U.S.C. §112. It is maintained that the word "combination" is fully defined by the Applicant in the Specification and well understood by one skilled in the art. Figures 2 and 4 illustrate the two preferred combinations of the underlying casino game with a knowledge-based bonus game. Numerous examples through out the specification further illustrates the combination of the underlying casino game and the knowledge-based bonus game into a casino self-contained game having the novel house advantage of the present invention. The word "combination" appears, for example, at page 37, line 19. The play of the two games, however, is separate and independent claims 1 and 25 have been amended to provide this clarification as suggested by the Rejection.

Independent claim 19 recites playing the knowledge-based game when the underlying casino game stops. This is separate play, not simultaneous play.

Independent claim 42 never recited the words "combined" or "combination" and recites that the first game of chance stops and the second knowledge-based game starts. It is not understood how claim 42 is a part of the above rejection and clarification is requested.

Based upon these amendments and the above discussion, it is maintained that independent claims 1, 19, and 42 and their corresponding dependent claims are allowable under 35 U.S.C. §112 (First Paragraph).

35 U.S.C. §112 (Second Paragraph) Rejection

Claims 1-18 were rejected and the above amendments overcome this rejection. Claims 1-18 are allowable under 35 U.S.C. §112 (Second Paragraph) based on the above amendments and arguments incorporated herein by reference.

35 U.S.C. § 102

Claims 1-7, 12, 13, 18, 42-46, 50, 55, 57 and 58 are rejected under 35 U.S.C. §102(b) as being anticipated by Keller and in the alternative, 2,197,974.

Neither Keller nor '974 have a casino game with a house advantage in a predetermined range with the predetermined range having set limits based on the correctness of the answers as found in claims 1-7, 12, 13 and 18.

Neither Keller nor '974 have a first game of chance with a negative player's expected return and a second knowledge-based game having a positive player's expected return as found in claims 42-46, 50, 55, 57 and 58. The terms "predetermined range," "house advantage, "negative player's expected return", and "positive player's expected return" are fully defined and illustrated in the specification a number of times. Keller is not a casino game. '974 does not have separate player expected returns for the play of the two separate games. Claims 1-7, 12, 13 and 18 have been amended to recite separate play of the combined underlying and bonus games in the casino game. In '974, the player never separately plays the underlying game with an expectation of receiving payoffs—the player must always correctly answer in the second knowledge game to receive the randomly obtained prize in the underlying game. Separate play and separate expected returns do not exist in '974.

The Rejection states with respect to Keller:

> "The house advantage is at the bottom of column 2, lines 61-67 where a player is played for the entertainment. The house advantage is nothing more than a percentage of the wager retained by the house for the privileges of playing the games."

The only appearance of the word "wager" appears in Keller at column 2, line 26 and this appearance clearly excludes the possibility that Keller places wagers and pays winners in his invention. The applicant respectfully disagrees with the aforesaid rejection. Furthermore, there is no teaching of "house advantage" or "percentage of the wager"

found in Keller. Keller requires a fee payment up front. He sells chips for the services. Column 2, lines 1-5. The term "wager" only has meaning in the world of gambling and not in the world of entertainment such as found with arcade games. As will be discussed later, Keller does not have a house advantage as the term is used. Keller is paid up front for his entertainment service. Claims 1-7, 12, 13, and 18 have been amended to recite that the casino game receives a wager to play the casino game. The claimed casino game recites playing both the underlying and the knowledge-based games. In contrast, Keller has no such teaching. Keller only teaches playing discrete slot and skill games. Keller requires "chips" to play the non-traditional slot game (col. 2, lines 5-15) and separate "tokens" to play one of many separate skill games (col. 2, lines 35-38). For this reason alone, claims 1-7, 12, 13 and 18 are patentably distinct over Keller under 35 U.S.C. §102 and §103.

As to claim 5 (stopping based on a condition occurring during play of the underlying game of chance), claim 5 has been amended to recite the appearance of a bonus symbol or a random number of wagers received as found at page 38 of the specification. As to claim 6 (stopping based on a condition unrelated to the play of the underlying game of chance), claim 6 has been amended to recite stopping when a random timer times out or when a random number appears in the roll of dice as found on page 8 of the Specification. These method features are not found in Keller or '974. As to claims 7(stopping at a given frequency), 12(providing at least one query), 13(multiple choice), and 18(paying a first and second amounts), when these claims are read with their corresponding independent claims all, for the reasons discussed above are patentably distinct and not anticipated over Keller or '974.

35 U.S.C. § 103(a)

Claims 8-11, 14-17, 19-30, 47-49, 51-54, and 56 were rejected in paragraphs 6 and 7 under 35 U.S.C. § 103(a) as being unpatentable over Keller and/or 2,197,974 in view of Thompson.

Independent claims 1(and, therefore, claims 8-11 and 14-17) and 42(and, therefore, claims 47-49, 51-54, and 56) are patentably distinct over Keller and/or '974 based on the arguments set forth above which are incorporated by reference.

Independent claim 19 (and, therefore, claims 20-24) recites a house advantage for the combined knowledge-based and underlying casino games within a predetermined range having a set limit based on all answers to all queries being correct and the wager. Keller is not concerned with wagers or casino games and actually teaches away from this claimed invention. '974 has no teachings of this claimed house advantage feature whatsoever.

Independent claim 25 (and, therefore, claims 26-30) recites a house advantage for the combined knowledge-based and underlying casino games in a range having a first set limit based on all answers to all queries being correct to a second set limit based on all queries being guessed at. Keller is not concerned with wagers or casino games and actually teaches away from this claimed invention. '974 has no teachings of this claimed house advantage feature whatsoever.

As to claim 8 when read with claim 1, neither Thompson in combination with either Keller or '974 renders claim 8 when read as a whole with claim 1 obvious. Indeed, Thompson is further evidence of nonobviousness as it has no teachings of the claimed house advantage as found in claim 1.

As to claims 9-11, 19, 20, 25-30, 48, 49 and 56, the cited references do not teach, suggest or infer the claimed house advantages. As discussed subsequently with respect to the Declaration, the "setting of the house advantage" is not an obvious design choice.

When claims 14, 15-17, 21-24 and 51-54 are read with their independent claims, they are patentably distinct over the cited references. It is maintained that all claims 8-11, 14-17, 19-30, 47, 49, 51-54 and 56, as amended, are patentably distinct over Keller and/or '974 in view of Thompson.

Supporting Declarations Under 37 CFR 1.132

In making the 35 U.S.C. §103 rejection, the Rejection states several times that the settings for the house advantage are obvious matters of design choice (e.g., see page 5, lines 2-3 of the Rejection). The applicant respectfully disagrees and submits the following Declarations.

Olaf Vancura, the sole inventor of the claims herein, is a nationally known expert

in casino games having authored two popular books and having appeared on television documentaries concerning the gaming industry. His background is in complex mathematics including the statistical analysis of gaming machines. In the Rejection, it has been stated that the house advantage determination is obvious. This Declaration from Olaf Vancura fully supports the opposite position that the claimed house advantages are not obvious. Indeed, despite the prevalence of adapting knowledge-based television game "themes" into casino games, the "State of the Art" evidence earlier provided further shows that the element of player knowledge has not been incorporated into the house advantage determination. Until his invention, it was not known how to handle responses based on the knowledge of a player in casino games in the United States which are required to operate on random, independent events and ensure a house advantage. All of the formulas in all of the examples found in the Specification are based upon such random events. The invention results in set limits for the house advantage for all play of the casino game. In the submitted United Kingdom references, it is not known how to provide set house advantage limits for knowledge-based casino games. As pointed out in his Declaration, knowledgeable players may bankrupt the house and, therefore, the machines in the United Kingdom must use adaptive logic to continually monitor money in and money out of the machine in order to prevent bankruptcy by changing the odds, by changing the series of questions (so they cannot be memorized), by increasing the difficulty of the questions, by reducing future payouts, etc. The house advantages claimed based on the formulas presented in the Specification provide set limits which statistically preserve the house advantage (hence, casino profit) even in the presence of a player with perfect knowledge over all play of the casino game. This has never been done before. Because the Vancura invention may be used to preserve a positive house advantage against *any* type of player, it precludes the arduous need for either monitoring which players receive which questions, monitoring which machines have shown which questions, monitoring and adapting the game based on past performance, and updating and/or progressing through the knowledge database periodically so as to try to preserve a house advantage.

The Rejection also stated that setting the house limit based upon a player who

simply guesses at the answers is obvious to one skilled in the art. Again, the Vancura Declaration is solid evidence of the nonobviousness of this approach. Indeed, careful analysis of Keller, '974, and the British references show no consideration for this hypothetical player let alone setting a house limit for the casino game over all play. This protects the player who guesses against the house taking an unfair advantage. By setting the limit for this guessing type of hypothetical player, such players who do not know the answers are encouraged, risk free, to continue play. Hence, this feature in and of itself is patentably distinct and nonobvious to one skilled in the art.

Furthermore, as found in the specification, the game may be designed with limits (for a perfect player and a player who simply guesses) sufficiently close (see, e.g., example 2 on page 13) so that all types of players enjoy a reasonable rate of return. In this way, players with vast knowledge are treated to a greater rate of return, but less knowledgeable players need not be intimidated. Their rate of return is also assured to an acceptable level, and furthermore they have the opportunity to learn and increase their rate of return.

The Vancura Declaration is further evidence that it was not obvious to one skilled in the art to provide a knowledge-based bonus game wherein players who incorrectly guess the answer still receive positive reinforcement in the form of an enhanced payoff. The cited references of Keller and '974A have no such teaching.

The notarized Declaration of John J. Grochowski is also attached as further evidence of (1) the need of the present invention in the casino industry, (2) the failure by the casino industry to meet this need, and (3) the nonobviouness of the applicant's house advantage. Mr. Grochowski is a nationally known expert in casino games-- especially in new casino games. Dr. Vancura demonstrated a demo version of the Ripley's game to Mr. Grochowski who then provided his notarized oath. His Declaration recognizes that a need exists for a casino game that allows players the opportunity to test their knowledge with awards based on their answers to questions (Paragraph 2). His Declaration further recognizes that the current casino games do not include the actual test of knowledge that is found in the TV shows which they are based on (Paragraph 2). The earlier submission of the State of Art evidence fully supports this statement. Mr. Grochowski expressed surprise that the demonstrated Ripley's casino

game could test a player's knowledge while remaining within regulatory and/or legal limits (Paragraph 3). Even so, Mr. Grochowski still believed a risk existed from players who know all the answers, that the game would not be able to provide a minimum house advantage (i.e., the house would bankrupt) (Paragraph 3). Mr. Grochowski was not told how the present invention in the Ripley's game provides a minimum house advantage against the perfect player who knows all the answers.

The Declaration of Fredic E. Gushin is also attached. Mr. Gushin is Managing Director of Spectrum Gaming which is an international casino gaming consultancy for both gaming regulatory and casino development issues. He is the former Assistant Director of the State of New Jersey Division of Gaming Enforcement having direct responsibility for testing new gaming devices for regulatory approval. Mr. Gushin testifies as to the non-obviousness of the house advantage of the Ripley's casino game:

> *In my experience, I am not aware of any casino game of chance having a bonus game wherein players can actually provide correct answers based on their player's knowledge to the casino game and receive higher payoffs. Before the Ripley's Casino game, I had never seen a game with this unique feature that could be included in the gaming device and still guarantee the necessary house advantage (especially against a player who knows all the answers) to allow approval in North American Gaming jurisdictions. Further, the Ripley's casino game provides lower payoffs to players who do not have the correct answers thereby encouraging such players to play. I was very surprised and intrigued to find such features available, as I previously did not believe it was possible to include such a knowledge-based component in a casino game and still have the game adhere to the necessary house advantage requirements of North American gaming jurisdictions.*

It is maintained that the claimed house advantages are non-obvious and are in condition for allowance.

Newly Submitted Claims

Independent claims 88, 111, 112, and 114 recite the instantaneous house advantage for a casino game having an underlying game of chance implemented with a knowledge-based bonus game. This is a single self-contained casino game. Claims

88, 111, and 112 further recite that the instantaneous house advantage is based on: (a) the wager in units, (b) the player's expected return in units for the underlying game of chance, (c) the player's expected return in units for the knowledge-based bonus game, and (d) the known statistical frequency rate of stopping the underlying game. This is found, for example, at page 8, line 17 – page 9, line 9 of the Specification. There is no disclosure in Keller or '974 of these claimed features. Claim 88 also recites an instantaneous house advantage within a predetermined range. The instantaneous house advantage while a function of factors (a), (b) and (d), above, is instantaneous in that it varies in the predetermined range based only on (c) above – i.e., only on the player's current knowledge in the form of correctness of the player's answers. This provides, as claimed, an average house advantage for the casino game in the predetermined range. Not only is there no teaching of a house advantage in Keller or '974, there is no teaching of any of these features. It is maintained that independent claims 88-102, 111, 112 and 114 are patentably distinct over Keller under 35 U.S.C. §102 or §103 taken alone or in combination with each other.

Independent claim 103 recites that the player is paid a higher positive amount when correctly answering the query and a lower positive amount when the player incorrectly answers the query. Support for this claim is found in numerous examples throughout the Specification. A new search is not required for claim 103 as it corresponds to original dependent claim 18 when read with original claim 1. In the cited Keller and '974, the player loses when the player unsuccessfully plays the skill game. In Keller, the player does not receive the "prize." And in '974, the player does not receive the payoff randomly selected in the underlying fruit machine. There is no teaching in either reference or any of the references cited of: (1) separately compensating the player in the play of the underlying game of chance at an expected return rate and then ending the casino game and (2) compensating the player when an incorrect answer is provided in the knowledge-based game of the present invention as found in claim 103. Claim 104 recites that the higher and lower positive amounts are greater than the wager. Example 1 on pages 10-11 of the specification supports this claim. Dependent claim 105 recites the series of questions embodiment on page 30 of the Specification. Dependent claim 106 recites the "degrees of difficulty" embodiment

on page 29 of the Specification. Dependent claim 107 recites the "double or nothing" embodiment found on page 30 of the Specification. Dependent claim 108 recited the "proximate response" feature found on page 28 of the Specification. Dependent claim 109 recites the embodiment of having a plurality of correct answers found in the embodiment on page 23 of the Specification. Dependent claim 110 recites the embodiment on page 13 of the Specification wherein the player, if incorrect on the first answer, but is correct on a second answer obtains a payout amount between the higher and lower positive amounts. Hence, new independent claim 103 and corresponding dependent claims 104-110 are patentably distinct over either Keller or '974 taken individually or in combination with each other.

Independent claim 113 recites that the casino game comprises two games, a slot game and a knowledge-based game, wherein the slot game is played then stopped in order to play the knowledge-based game which continues the play of the overall casino game. In the play of the knowledge-based game, the player's expected return is at a first limit based upon all answers always being correct and at a second limit based on all answers being guessed at. As a design choice based on the teachings in the Specification, these first and second limits are set for all play of the casino game. There is no teaching in Keller whatsoever of either limit or the fact that it is set for all play of the casino game. Nor is there any teaching in Keller, as mentioned above, of a knowledge-based game that works with a slot game to provide an overall casino game based on a received wager. '974 provides a standard fruit machine with a published lookup table of prizes 7. When a winning combination occurs on the payout line 8, the potential of a payoff exists only when the player successfully completes a series of questions. Claim 113 provides an expected return to the player in the underlying slot game which has no meaning in '974. Claim 113 recites separate payoffs during the play of the underlying slot game and the knowledge-based bonus game. It is maintained that new claim 113 is patentably distinct over Keller or '974 taken individually or in combination with each other.

New claims 114-119 recite the instantaneous house advantage of the present invention being "set over all play of the casino game as a function of the correctness of the at least one answer." This is supported throughout the specification as presented

above. The player is paid (a) when the player wins in the underlying game of chance and (b) during play of the separate knowledge-based game based as a function of the correctness. None of the cited references, provide a casino game wherein the player plays the underlying game of chance with an expected rate of return, plays the bonus game at an expected rate of return based upon the correctness of the answer from the player so as to provide an instantaneous house advantage set over all play of the casino game. Dependent claim 115 provides the formula set forth in the specification at page 9, dependent claim 116 sets forth one set limit where the player always answers the questions correctly during all play of knowledge-based game and dependent claim 117 recites the second limit of the instantaneous house range being set at all play of the knowledge-based bonus game when answers always guessed at. Dependent claim 118 sets forth that the known frequency rate is periodic and claim 119 that it is random with a statistical frequency over time. Claims 114-119 are patentably distinct over Keller and '974 taken individually or combined together.

New method claims 120-122 cover the embodiment of the present invention on page 16, lines 6-13 of the Specification wherein the player's expectation in the knowledge-based bonus game varies over time, but obtains the set limits for all play of the casino game. Neither Keller nor '974 teach this claimed invention.

New claim 123 is directed to the casino game shown in Figure 1 with the house advantage in a range having a first limit with all player answers correct and a second limit with all player answers guessed at and with the house advantage being equal to or greater than zero. Neither Keller or '974 teach this claimed casino game.

New claims 124 -129 are directed to a method of playing a casino game having an underlying game of chance and a knowledge-based bonus game where the instantaneous house advantage varies dependent on the correctness of the player's answers but only in a set range and with the house advantage greater than or equal to zero. Neither Keller nor '974 teach these claimed methods.

Newly Cited Prior Art

The Walker 6,193,606 B1 patent is a variation on '974 in that the conventional slot game pay table is modified: increased (for a correct answer), decreased (for an

incorrect answer), or maintained (for no answer) (see Figure 9). These modifications to the pay table fund the game (see col. 2, lines 50-53). The trivia questions of Walker, like '974, do not constitute a separate knowledge-based game as taught herein. For completeness, the references cited in Walker are submitted herein. In Walker, money saved from wrong answers (i.e., the player is penalized from the standard pay) is believed used to pay money paid for right answers (i.e., the player is rewarded from the standard pay). This funding approach in Walker penalizes the player who has no knowledge (as shown in Figure 9, a "no trivia answer" always pays more than "an incorrect trivia answer")—those players receive a greater payoff simply playing the slot game and winning one of the certain predefined winning combinations. The present invention with its house advantage range and its set limit for the player who always guesses actually encourages such players as they will always be rewarded. Neither Walker, the British references, Keller nor '974 encourage play by players who guess as represented by a set limit in the house advantage range of the present invention

The British references discussed in the Vancura Declaration are further evidence of the patentablity of the present invention and are also provided herein. The British references by using adaptive logic to monitor money into the machine and money paid out, actually discourages knowledgeable players by changing game parameters to make it more difficult for knowledgeable players to win in future plays of the game. The present invention encourages knowledgeable players (or team players) to always play and receive a higher payoff for being correct and yet the house advantage is preserved at a set limit to protect the casino.

Conclusion

For these reasons set forth above, all pending claims are patentably distinct over the references cited and allowance of claims is respectfully requested.

Should the Examiner have any questions regarding the above, please feel free to give the below-listed attorney a call. If additional fees are required, please debit our Deposit Account No. 04-1414.

Respectfully submitted,

DORR, CARSON, SLOAN & BIRNEY, P.C.

Date: _____6/05/01_____   By:_____

Robert C. Dorr
Reg. No. 27,782
3010 East 6th Avenue
Denver, Colorado 80206
(303) 333-3010

\\Dcsp\common\RCD\MIKOHN\PATENT\198a Reponse Olaf3Fin.doc